

Atty. Dkt. No. 062987-0107

IRW

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: LIU et al.

Title: SYSTEMS AND METHODS FOR  
PRODUCING SINGLE-WALLED  
CARBON NANOTUBES  
(SWNTS) ON A SUBSTRATE

Appl. No.: 10/759,592

Filing Date: 1/16/2004

Examiner: Markham, W.

Art Unit: 1762

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR §1.56**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The USPTO has waived the requirement under 37 CFR 1.98(a)(2)(iii) to submit copies of cited pending applications which are stored in the USPTO's Image File Wrapper (IFW) system. Applications filed on or after June 30, 2003, and international applications that have entered the national stage on or after June 30, 2003, have been or are being scanned into the IFW system. Accordingly, copies of these types of documents are not being supplied in connection with this application. Reference is being made to OG Notice dated October 19, 2004, *Waiver of the Copy Requirement in 37 CFR 1.98 for Cited Pending U.S. Patent Applications*.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

**TIMING OF THE DISCLOSURE**

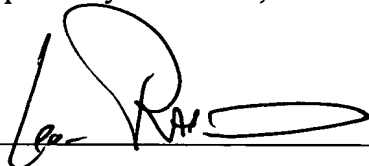
The listed documents are being submitted in compliance with 37 CFR §1.97(b), before the mailing date of the first Office Action on the merits.

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Although Applicant believes that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 19-0741.

Respectfully submitted,

Date 3/20/06

By 

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Attorney for Applicant  
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Substitute for form 1449B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  Date Submitted: March 20, 2006 (use as many sheets as necessary)				<b>Complete if Known</b>	
				Application Number	10/759,592
				Filing Date	01/16/2004
				First Named Inventor	LIU et al.
				Group Art Unit	1762
				Examiner Name	Markham, W.
Attorney Docket Number				062987-0107	

STP 2  
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 PATENT & TRADEMARK OFFICE

**U.S. PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A1	6,333,016	B1	Resasco, et al	12/25/2001	
	A2	5,458,784		Baker et al	10/17/1995	
	A3	2003/0161950	A1	Ajayan et al.	08/28/2003	
	A4	2003/0165418	A1	Ajayan et al.	09/04/2003	
	A5	6,346,189	B1	Dai et al.	02/12/2002	
	A6	6,749,827		Smalley et al.	06/2004	

**U.S. PATENT APPLICATION DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Application Document		Name of Patentee or Applicant of Cited Document	Filing Date of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Serial Number	Kind Code <sup>2</sup> (if known)			
	A7	11/342,557		LIU et al.	01/31/2006	

**FOREIGN PATENT DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

**NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	A8	ZHU, et al., "Direct Synthesis of Long Single-Walled Carbon Nanotube Strands," <i>Science</i> , Vol. 296, pp. 884-886 (May 3, 2002)	
	A9	WEI, et al., "Structural Characterizations of Long Single-Walled Carbon Nanotube Strands," <i>Nano Letters</i> , Vol. 2, No. 10, pp. 1105-1107 (2002)	
	A10	LI, et al., "Self-organized Ribbons of Aligned Carbon Nanotubes," <i>Chem. Mater.</i> , 14, pp. 483-485 (2002)	
	A11	CI, et al., "Preparation of carbon nanofibers by the floating catalyst method," <i>Carbon</i> 38, pp. 1933-1937 (2000)	

Examiner Signature	Date Considered	
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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		Group Art Unit	1762
		Examiner Name	Markham, W.
Sheet 2 of 3	Attorney Docket Number	062987-0107	

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Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	A12	Vigolo, et al., <i>Science</i> 290, 1331 (2000).	Y
	A13	Endo et al., <i>J. Phys. Chem. Solid</i> 54, 1841 (1993)	Y
	A14	Andrews et al, <i>Chem Phys. Lett.</i> 303, 467 (1999)	Y
	A15	Fischer et al, <i>Phys. Rev. B</i> 55, R4921 (1997)	Y
	A16	Zhang, P.E. Lammert, V.H. Crespi, <i>Phys. Rev. Lett.</i> 81, 5346 (1998)	Y
	A17	Treacy, T.W. Ebbesen, J.M. Gibson, <i>Nature</i> 381, 678 (1996)	Y
	A18	Wong, P.E. Sheehan, C.M. Lieber, <i>Science</i> 277, 1971 (1997)	Y
	A19	Yu, B.S. Files, S. Areepalli, R.S. Ruoff, <i>Phys. Rev. Lett.</i> 84, 5552 (2000)	Y
	A20	Lu, <i>Phys. Rev. Lett.</i> 79, 1297 (1997)	Y
	A21	CHENG et al, Chemical Physics Letters, 19 June 1998, vol. 289, pages 602-610	
	A22	CHENG et al, Applied Physics Letters, 22, June 1998, vol. 72, no. 25, pages 3282-3284	
	A23	BAUGHMAN et al., "Carbon Nanotube Actuators," <i>Science</i> , May 21, 1999, Vol. 284, pp. 1340-1344.	
	A24	FAN et al., "Self-Oriented Regular Arrays of Carbon Nanotubes and Their Field Emission Properties," <i>Science</i> , January 22, 1999, Vol. 283, pp. 512-514.	
	A25	FORRO et al., "Physical Properties of Multi-wall Nanotubes," <i>Carbon Nanotubes, Topics Appl. Phys.</i> , 2001, Vol. 80, pp. 329-390.	

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	A26	HATA et al., "Water-Assisted Highly Efficient Synthesis of Impurity-Free Single-Walled Carbon Nanotubes," Science, November 19, 2004, Vol. 306, pp. 1362-1364.	
	A27	IJIMA, Sumio, "Helical microtubules of graphitic carbon," Nature, November 7, 1991, Vol. 354, pp. 56-58.	
	A28	KIM et al., "Synthesis of Ultralong and High Percentage of Semiconducting Single-walled Carbon Nanotubes," Nano Letters, 2002, Vol. 2, No. 7, pp. 703-708.	
	A29	LAUNOIS et al., "Structural Characterization of Nanotube Fibers by X-ray Scattering," J. Nanosci. Nanotech., 2001, Vol. 1, No. 2, pp. 125-128.	
	A30	LI et al., "Tensile strength of single-walled carbon nanotubes directly measured from their macroscopic ropes," Applied Physics Letters, November 13, 2000, Vol. 77, No. 20, pp. 3161-3163.	
	A31	PAN et al., "Very long carbon nanotubes," Nature, August 13, 1998, Vol. 394, pp. 631-632.	
	A32	ROLS et al., "Diffraction by finite-size crystalline bundles of single wall nanotubes," Eur. Phys. J. B, 1999, Vol. 10, pp. 263-270.	
	A33	THESS et al., "Crystalline Ropes of Metallic Carbon Nanotubes," Science, July 26, 1996, Vol. 273, pp. 483-487.	
	A34	ZHANG et al., "Substrate-site selective growth of aligned carbon nanotubes," Applied Physics Letters, December 4, 2000, Vol. 77, No. 23, pp. 3764-3766.	
	A35	JIANG et al., "Spinning continuous carbon nanotube yarns," Nature, October 24, 2002, Vol. 19, p. 801.	

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